

CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

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REPORT

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SUBJECT Situation in Solid Fuels for Steel Mills

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1. The supply of coke for steel mills and foundries remains one of the bottlenecks in East German industry. The proper conducting of the smelting process is made difficult for the blast-furnace operator not only because of the lack of high-quality coke, but also because of the differences in quality of the solid fuels which are delivered. It is difficult to control the furnace temperature as a result of these fluctuations. The unusually high amounts of scrapped cast iron are in the main a direct result of the situation where the furnace temperatures necessary for the proper conducting of the smelting process are nearly or absolutely unattainable when using the available solid fuels.

2. In 1952, the East German Government confidently hoped that the shortage in the coke supply could be alleviated by the production of lignite coke, produced by a special procedure. On the basis of this, the extensive construction work at the Grosskokerei Lauchhammer was decided upon. But it was later recognized that this hope was not to be realized. The coke produced at Lauchhammer cannot be used alone but only as an additive to furnace coke (Zechenkoks). This Lauchhammer coke is now known as lignite high-temperature coke (Braunkohlenhochtemperaturkoks - BHK) in East Germany. The term "alternate fuels" (Ausweich-Brennstoffe) means the lower-quality fuels which are to be used in the absence of high-quality fuels; for example, BHK in place of furnace coke, or crude lignite in place of good-quality briquettes.

3. The Grosskokerei Lauchhammer enterprise, as of January 1955, covered an area of about two square kilometers. The total personnel numbered about 2000. The general manager of the enterprise was Werksleiter Wichert (fnu); the commercial chief, Hensel (fnu) formerly had been employed at the Emil Busch AG firm in Rathenow.

4. Of the 24 furnace units at Lauchhammer which, according to a resolution of the Council of Ministers, were to be ready by 21 December 1954, only 10 were in operation by the end of 1954. It was expected that 7 more units would be put into operation in 1955. The steel structural work for all 24 units was

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already completed. A furnace unit was designated as a group of 4 furnaces, each of which has 6 combustion chambers. Each unit costs approximately one million DME. About 250,000,000 DME have already been invested in this enterprise; a further 62,000,000 DME investment is planned for 1955.

5. About 70% of the total production of Lauchhammer was BHK; the remaining 30% consisted of by-products of the carbonization process, i.e. tar, oils. (light and middle-weight), sulfur, and phenol. Daily coke production was about 1,500 tons, which amount was derived from 2,500 tons of finest-grain lignite briquettes, which had a maximum water content of 12% and a compressed strength of 200 kg/sq.mm. Thus the water content of these briquettes is about 6% less than that of ordinary briquettes. These finest-grain briquettes travel on a conveyor belt 1,000 m. long from the VEB Briкетtfabrik Friedenswacht, where they are produced, to the Lauchhammer coking plant. Other briquettes could be used just as well; however, because of the transportation costs, the coking plant is temporarily working in conjunction with this briquette factory.

6. The coking process is a continuous one. The briquettes mentioned above are pre-dried to a water content of 2%. Every 50 minutes, a constant amount of these pre-dried briquettes is moved along to the carbonization chambers. As long as the briquettes are of equal quality, the process continues satisfactorily. Fluctuating water content and other undetermined reasons have been causing numerous breakdowns. To eliminate these breakdowns, a rapid analysis of the quality of the briquettes ready for coking is carried out at frequent intervals. Then the tempo of the carbonization process is regulated according to the results of these analyses. However, the expected high production of coke through the continuous process of coking is considerably impaired because of this procedure.

7. This continuous process of coking was developed mainly by Professor Dr. Rammler, Dr. Thomas, and Dr. Gold.

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Thomas was employed at PKM (Projektierungs-, Konstruktions- und Montagebuero) and was working on a project for an improved carbonization process. With this new process, it was hoped that the lignite would not need to be pre-dried as much as before, but that it could be carbonized with a relatively high water content. The carbonization was to be carried out in a compression chamber under a pressure of 25 Atm and at a temperature of more than 1,000°C. Allegedly, an experimental furnace was already in operation at the Lauchhammer plant. Thomas allegedly knew the theoretical bases of the new process.

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8. The processing of BHK for use as a fuel for smelting is as follows: the coke is finely ground, the coke dust is then pressed into briquettes with a binding agent, then this product is used as an "alternate fuel" along with furnace coke in the smelting process of the steel mills. The BHK, as it comes from the furnaces at Lauchhammer, is completely unusable for the steel foundries. It has other uses, however, and is consumed by the following enterprises:

Grain size 1 to 3
(Koernung)

Grain size 3 to 15

Grain size 15 to 30

VEB Kaliwerk Glueckauf, Sonderhausen

VEB Stickstoffwerk Piesteritz

Goerich & Co. (private enterprise) in Halle.

Used as material for cementing powder in surface hardening (Einsatzhaertung)

VEB Elektrochemisches Kombinat Bitterfeld

VEB Bunawerk Schkopau

VEB Synthesewerk Schwarzheide

VEB Kaliwerk Glueckauf, Sonderhausen

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Grain size over 45

VEB Kaliwerk Oepitz bei Poessnitz
 VEB Kupferwalzwerk Michael Niederkirchner,
 Ilsenburg
 VEB Sodafabrik Bernburg
 VEB Leunawerk Walter Ulbricht
 VEB Harzkalkwerk Rusebeld

Consumers of the by-products of Lauchhammer are the VEB Hydrierwerke Zeitz, Leuna, and Boehlen. There were also consumers for coal dust, but storage installations were lacking at Lauchhammer. Also, the Reichsbahn did not have any of the special cars needed for the transport of coal dust. Some such cars have been built, but only for export (mainly to the USSR).

9. The waste gases continue to be burned off in the open. A long-distance gas supply to Czechoslovakia is already planned, but materials are lacking. Besides this, precautions must be taken to insure that the gases are non-explosive. Unexplainable explosions occurred in the power plant of the Lauchhammer enterprise during experiments there on the burning of these gases. One of these explosions considerably damaged one of the two chimneys of the power plant.

10. The discouraging situation in the supply of solid fuels is shown in the following figures: Although the reserves had been dipped into, there remained at the end of 1954 a deficit of 311,000 tons of lignite briquettes while the deficit in crude lignite was 1.4 million tons. An improvement in the existing situation is not expected in 1955. State Secretary Alfred Binz, chief of the State Committee for Material Procurement, was made the scapegoat for these deficits; he was removed from his position on the State Committee for Material Procurement.

11. Maxhütte in Unterwellenborn consumes about 30,000 tons of coke monthly, mainly from Poland [redacted] The monthly demand for BHK is only about 1,800 tons.

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12. EKO (Eisenkombinat Ost) Fuerstenberg has a monthly requirement of about 100,000 tons of coke, which is mainly covered by imports from Poland and Czechoslovakia. BHK consumption at this plant was not known. Unloading installations there were insufficient for handling the incoming shipments; therefore large amounts of money had to be paid out in penalties (Standgeld).

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